

MEMORANDUM

EPA Region 5 Records Ctr.



349594

DATE: December 20, 1993

TO: Ted Lietzke, WWES G.R. **CC:** Liz Bartz, WWES G.R.

FROM: Joe Montello *JM*

RE: Comments on Glenview Naval Air Station SI Report (project #4015.10)

We have completed review of additional portions of the SI report for the Glenview Naval Air Station (NAS) dated 8/11/93. Comments on sections previously reviewed, including Sites 2 and 9, were forwarded in a memo dated December 10. This memo covers Sites 1, 3, 4, and 5.

GENERAL COMMENTS

There are several general comments which pertain to the investigations at each of the nine sites. Some of these were supplied in the previous memo. The following are additional general comments.

Scales should be provided on all figures

Physical and chemical properties of the compounds detected are discussed concerning migration potential. These are only discussed in general terms. The properties should be discussed with respect to site-specific conditions. Site-specific data are needed to evaluate migration potential. For instance, what are the organic carbon content and hydraulic conductivity of the soil?

The laboratories used for this project appear to have poor QA/QC. Many detections of a wide range of compounds typical of lab contamination occurred and much of the sample data are qualified. This makes it difficult to have a clear assessment of compounds actually present in the soil or groundwater.

The chemical concentration contour maps in all sections need to be revised. Data for each sample for each boring should be listed. The maps list data for only one sample per boring. It is not clear or consistent on how the listed sample was selected. The results listed are not always the highest values for the boring. Therefore, the contours drawn have little meaning and conclusions on potential source locations may be erroneous. The chemical concentration contour maps should indicate which parameter is being contoured. Contour maps should not be drawn with only one data point.

The inorganic (metals) data for soil are discussed in general terms. It is concluded that, based on a qualitative review of the data, that metals at a given site are consistent and not a concern.

Appropriate clean-up standards should be discussed. Background levels may need to be established to quantitatively evaluate the metals data.

It is surprising that benzene was not detected at sites where other BTEX compounds were detected. Clean-up standards for benzene are generally the most stringent of the BTEX compounds due to its potential health risks. The BTEX detections were dismissed as a concern because the levels were below IEPA standards. However, low level benzene could be a concern. Were any lab internal standards run to ensure proper detection of benzene? If not, this should be done for future sampling.

The vertical trends in contaminant concentrations need to be more clearly discussed for each site.

SITE 1 - OLD FIRE FIGHTING TRAINING AREA

BACKGROUND

Fire fighting training exercises were conducted in the late 30's and early 60's near the west end of old Runway 7. Site 1 is currently part of a new mobile home park. The material burned included AVGAS, JP-4, waste oils, solvents, and fuels. Most of the activity took place south of the old compass rose (northeast section of mobile home park). Surface water formerly drained to southeast, through SW06 and off base. Area had previously been lower and a small stream was present before the runway was built (1945-1953). A portion of the runway was removed (post-2/89) and 2-3 feet of soil was excavated and stockpiled on site. Some of this soil was used as backfill in the trailer home park.

COMMENTS

Figures 1.1 through 1.5 should indicate the location of mobile home park and townhomes and should more clearly indicate current use of Site 1 and adjacent land use.

Section 1.1.1, page 32. Historic photos showed blackened areas and stressed vegetation south of the runway. Why were borings not concentrated south of runway?

Section 1.1.1, page 32. The results of previous soil sampling in February 1989 (discussed in a May 1989 report) indicated several compounds were present and further study was warranted. A 1990 Soil Stockpile report is referred to for details of the stockpile sampling and analysis. The SI report should summarize the results of these investigations in more detail including parameters analyzed, compounds detected, specific locations of samples, and concentrations. Without these details, it cannot be determined if the boring locations and parameters selected for the SI are appropriate.

Section 1.1.1, page 33. A portion of the stockpile was used as fill around concrete pads of mobile homes. After the stockpile was sampled and analyzed, this was discontinued. The concentrations of contaminants in the fill around the homes and health risks should be evaluated. This is mentioned as a recommendation. Investigation of this material is particularly important because of the likelihood that PNA's are present and the high potential for direct human contact.

In addition, a Tot Lot (Playground) is within Site 1. Any risk evaluations should be very conservative.

Section 1.1.3, page 33. The soils were sampled for cadmium, chromium, and lead. Why were these metals selected? Because waste oils were burned, other metals such as nickel and zinc should be considered.

Section 1.1.3, page 33. The reference sample at Site 1 is not an appropriate background sample because it contained contaminants at levels similar to samples from the other borings. The location of this sample is within the area of impact.

Section 1.2, page 35. The report states that wells were not installed because sufficient ground water was not encountered. It was decided wells would not be installed unless soil contaminants were detected during the SI. Was it not clear from previous work that soil contamination existed?

Section 1.2.2, page 34. Regarding relocation of the borings, the sentence "They were ultimately located to the right" is unclear.

Section 1.4.1.2, page 36. Data from lab blanks should be provided to compare with sample data.

Section 1.4.1.2, page 36 and 37. It is not clear whether the cited IEPA standards are appropriate for this site. More conservative standards may exist.

Section 1.5.1, page 40. The migration potential for PNA's should be evaluated because these pose the greatest health risk.

Section 1.5.2, page 40. Dust transport should be discussed. Exposure by direct human contact and ingestion should be considered. Has any sampling of sediment transported from the site in surface water been performed?

Table 1.1. PNA's should be added.

Section 1.6, page 41. Further study is needed to determine the horizontal and vertical extent of contamination for all contaminants identified to ensure that the areas of greatest contamination have been delineated. The former surface drainage at Site 1 was to the southeast. Further evaluation of contamination in this direction should be considered.

Section 1.7, page 42. It is agreed that further investigation of PNA's is needed. Evaluation of the concentrations and health risks of the PNA's should be given a high priority. People are living and children are playing in the immediate area (a playground is mentioned). The shallowest soils analyzed were at 5 feet. What assurance is there that near surface soils are not impacted? Sampling of surficial soils should be performed to determine if PNA's are present. Data also indicate that BTEX concentrations increase to the north, beyond the study area. Further investigation of BTEX is also needed.

Wells should be installed during the next phase of the investigation to determine if there is an impact to ground water. Water accumulation was noted in two of the four SI borings indicating sufficient ground water exists.

SITE 3 NORTHERN OLD BURN AREA

BACKGROUND

Hazardous and non-hazardous base-generated wastes were burned including rubbish, paints, solvents, and fuels. Ashes were covered with or mixed with soil. Area was also used for disposal of materials as indicated by piles seen in historic photos. A small former creek was filled in before 1963 and other areas have received fill material.

Area is currently used for equipment storage and parking and contains 6 one-story buildings. Most of area is now vacant grass and is used for recreation. A portion of area (fenced) was previously used as hazardous waste storage area. A spill of unknown substance reportedly occurred near boring SB0302. No remediation took place. No previous study of Site 3 has occurred. Objectives of the SI were to determine if contamination exists.

COMMENTS

Section 3.1.2, page 105. Were potential surface water receptors evaluated for impact?

Section 3.2.1, page 106. Documentation should be provided for groundwater sampling - field observations; sample times; field measurements of pH, conductivity, temperature; purging device; handling of purge water; recovery rates; etc.

Section 3.2.2, page 107. The shallowest soil sample was from 4 feet. Soil above 4 feet may contain the highest levels of contamination.

Section 3.2.3.1, page 107. The presence of lenses of sand and gravel and any ground water encountered should be discussed in greater detail.

Section 3.3.1, page 108. What were the criteria for location of wells and screen depths? It would be helpful to add screen depths and elevations to the table on top of page 109.

Section 3.3.3, page 109. The water level elevations are not shown on Figure 3.2 as indicated in text.

Section 3.4.1.1, page 110. If holding times were missed for Pesticides and PCB's, future samples should be analyzed for these parameters.

Section 3.4.1.2, page 111. Data for all blank samples should be provided. It is not clear that IEPA Class II soil clean-up levels are appropriate for this site.

Section 3.4.1.2, page 112-113. Very high levels of PNA's and naphthalene were found at only one boring (SB0302). Low level BTEX and acetone were detected at several borings.

Section 3.4.3.3, page 116. Detection limits should be specified.

Section 3.4.3.6, page 117. Very low level pesticides were detected in some groundwater samples. Applicable standards for pesticides should be discussed.

Section 3.4.3.7, page 117. Were groundwater samples filtered or unfiltered?

Section 3.4.3.8, page 118. An error was made in calcium data listed on the table.

Section 3.6, page 122-123. As mentioned in the report, more work is needed to define the extent of soil contamination. This should include BTEX, acetone, PNA's, and naphthalene.

Section 3.7, page 123. It is not clear why the existing wells should be resampled other than to verify the low level pesticide detections. Consideration should be given to installing an additional well near (northeast of) SB0302.

Additional borings should be located northwest, west, southwest, south, and southeast of SB0302 to investigate the extent of contamination. It is possible that contamination also exists to the south of the paved road shown on Figure 3.1. Given the apparently local nature of the contaminants found at SB0302, other highly contaminated spots may exist. A greater density of borings may be needed to investigate the entire area of Site 3.

Table 3.1. All the detected PNA's should be listed.

Exhibit 3.4, Lab data. The low level semivolatile detections should be discussed: 2-methylnaphthalene at 41 ppb in SB030321 and at 31 ppb in SB030418; phenanthrene at 33 ppb in SB030113, at 44 ppb in SB030321, and at 34 ppb in SB030418. These data indicate that low level contamination may occur over a large part of Site 3.

The high level of bis(2-ethylhexyl) phthalate at SB030204 indicates that detections at other locations may indicate soil contamination rather than strictly lab contamination.

SITE 4 - OLD BURN AREA NO. 3

BACKGROUND

Site 4 was used to dispose of wastes in same manner as described for Sites 2 and 3. Little information is available on type of wastes, duration of activities and size of site. SI included an approximately 16.5 acre parcel and a second 2.75 acre parcel. The smaller parcel contained landscaping and construction debris which was removed in 1991. A small, former stream was rerouted south. The larger parcel now used as golf driving range. Surface water is to storm water and tile system then through SW07 and eventually West Fork of the North Branch of

Chicago River. Larger parcel is now covered with soil and apparently vegetated. Smaller parcel is not vegetated. No previous study has been conducted at Site 4. Objectives of SI were to determine if contamination exists and to define approximate locations of past activities.

COMMENTS

Section 4.1.3, page 168. The shallowest samples analyzed were 6 to 8 feet. Given the activities that took place, it would be expected that contamination would be greatest in near surface material, above 6 feet.

Section 4.2.2, page 169. The spacing and location of borings on figures 4.1 and 4.2 are not consistent.

Section 4.2.3, page 170. Were there any signs of ash, fill material, or waste in the borings?

Concerning the occurrence of groundwater, how long were the borings left open to allow for accumulation? Was the water encountered associated with any change in texture? The discussion of groundwater at Site 4 and its relation to other areas of the NAS is unclear and should be expanded.

Section 4.4.1.1, page 171. The site reference sample appears to be in an impacted area and is not an appropriate background sample.

The lab QA/QC is apparently very poor. Results showed poor reproducibility. Dilution of samples was required with diluted values being inconsistent with original values. Were holding times exceeded when dilution was required? These uncertainties shed doubt on the validity of all the sample results.

Section 4.4.1.2, page 172. The acetone data are particularly suspect. Values for samples collected one day were consistently higher than on another day. It should be assumed that acetone is a concern at Site 4 until demonstrated otherwise.

Section 4.4.1.3, page 174. Cyanide was detected in two soil samples. Are there any appropriate standards for cyanide?

Section 4.7, page 179. The presence of contaminants in relatively deep samples indicates groundwater should be investigated during future studies. In addition, the report discusses potential migration from groundwater to surface water and vice versa.

Specific recommendations for the RI should be supplied. Targeting the area of SB0404 and the area northeast of SB0404 is reasonable. However, other parts of Site 4 cannot be dismissed. Further study of acetone, BTEX (including benzene), PNA's, and pesticides is warranted. The very high level of bis (2-ethylhexyl) phthalate at SB040306 indicates that this compound should also be a concern.

SITE 5 OIL/WATER DETENTION BASIN

BACKGROUND

The basin was constructed in 1979 to recover spills or leaks from base activities and to control floodwater. The southern portion of the NAS, including the tile system below part of the airfield, drains to the basin. Discharge from the basin is southeast through SW06 to the West Fork of the North Branch of the Chicago River. The objective of the SI was to determine if contamination exists from material entering the basin including fuel, oils, solvents, anti-freeze, etc. No previous study has been performed.

COMMENTS

Section 5.1.2, page 214. The basin is 625 x 200 feet and consists of an excavated ditch with berms on the east and west and retaining walls on the north and south. More information should be supplied on the construction of the basin. What are the depth and volume? Does the bottom have an engineered liner? A more detailed diagram and cross sections would be helpful. Is the spill collection active or passive?

Because the basin is in a flood prone area, contamination from pre-basin flooding may have occurred over a large area. Is there any record that the basin has overflowed?

Section 5.1.3, page 215. Because the basin receives drainage from many possible contaminant source areas, samples should be analyzed for all parameters of concern at the NAS including pesticides and herbicides. Why were cadmium, chromium, and lead selected for analysis but other metals omitted?

Section 5.2.3, 5.3, page 217. Given that the basin contains water and is located in a flood prone area, it seems unlikely that groundwater is not present. The hydrogeologic interaction between the basin and the groundwater system needs to be investigated to understand potential migration. Were any samples of the sediment within and directly below the basin collected?

Section 5.4.1, page 217. A duplicate soil sample was collected. The report should discuss reproducibility of the results.

Section 5.4.1.2, page 218. Acetone is apparently present in the soil at Site 5. Acetone should be included in any future studies and other appropriate standards should be considered.

Trace concentrations of toluene and xylene have been reported at Site 5 and several other sites. Has the possibility that these detections resulted from lab or sampling contamination been investigated?

Section 5.4.1.2, page 219. The results of sampling of SW06 should be discussed with Site 5.

Section 5.4.1.3, page 219. The lead levels at the reference sample (975 mg/kg) and SB050202 (243 mg/kg) indicate lead contamination exists. Lead standards should be discussed and lead should be included in any future study. Other metals should be considered.

Section 5.4.1.4, page 219. Is it possible that the TICs detected at Site 5 and other sites are naturally occurring hydrocarbons?

Section 5.7, page 224. Any future study at the site should include acetone and lead as well as PNA's. The potential for transport via sediment, surface water, and ground water should be evaluated in the future. Sediment samples should be collected from the basin.

Figure 5.5. Why is the high lead level at SB0502 not listed and contoured?

Lab Data. The methylene chloride detections should be discussed. Are these all attributable to lab contamination?

The TICs are reported at relatively high concentrations. These warrant further study.

We will continue review of the remaining sites. Please call if you have any questions.